

AMENDMENTS TO THE CLAIMS

- At time of the Action: Claims 1-32
- Amended Claims: Claims 1-14 and 20-32
- After this Response: Claims 1-32

The following listing of claims replaces all prior versions and listings of claims in the application.

1. (Currently Amended) A computer-readable storage medium having computer-executable instructions thereon which, when executed by a computer ~~that enable~~ remote execution of a command, the instructions comprising:

receiving a command line instruction including a remote command, the remote command identifying a task of execution to be performed on a remote system;

initiating a session with least two remote systems;

assigning each session to an environment variable configured such that a plurality of commands can concurrently use the session by referring to the environment variable; and

causing the remote command to be executed concurrently on each of the at least two remote systems, including issuing the remote command to the environment variable, wherein the environment variable is a variable maintained by a local command line environment and the environment variable is further configured such that the variable is used to share information between processes or applications.

2. (Currently Amended) The computer-readable storage at medium recited in claim 1, wherein the session comprises a connection between a system on which the command line instruction is received.

3. (Currently Amended) The computer-readable storage medium recited in claim 1, wherein the session is initiated as a persistent session that is available to perform subsequent remote commands.

4. (Currently Amended) The computer-readable storage medium recited in claim 3, further comprising receiving a second command line instruction including a second remote command and causing the second remote command to be executed using the persistent session.

5. (Currently Amended) The computer-readable storage medium recited in claim 1, wherein the remote system comprises a remote agent configured to return information to the local system wherein the information comprises at least one of a result of the execution, meta information, and information about the remote system from which the result originated.

6. (Currently Amended) The computer-readable storage medium recited in claim 1, wherein the remote system comprises an alternate process.

7. (Currently Amended) The computer-readable storage medium recited in claim 1, wherein the remote system comprises an alternate application domain located on a local computing system.

8. (Currently Amended) The computer-readable storage medium recited in claim 1, wherein causing the remote command to be executed comprises delegating the step of causing the remote command to be executed to a controller associated with a subset of the at least two remote systems.

9. (Currently Amended) The computer-readable storage medium recited in claim 8, wherein each of the at least two remote systems comprises a node in a hierarchical network

topology and the controller holds a position in the hierarchy between the subset of the at least two remote systems and the system receiving the command line instruction.

10. (Currently Amended) The computer-readable storage medium recited in claim 1, wherein the remote command is concurrently executed on each of the at least two remote systems.

11. (Currently Amended) The computer-readable storage medium recited in claim 1, further comprising aggregating results of executing each remote command.

12. (Currently Amended) The computer-readable storage medium recited in claim 11, wherein the results are aggregated into an array.

13. (Currently Amended) The computer-readable storage medium recited in claim 11, wherein the results include information that identifies on which remote system the results originated.

14. (Currently Amended) A computer-executable method of remote execution of a command, the method implemented on a computing device by a processor configured to execute instructions that, when executed, direct the computing device to perform acts comprising:

receiving at a local system a first command line that identifies a remote system;

causing a session to be created between the local system and the remote system, the session including a connection to a remote process resident on the remote system;

assigning the session to an environment variable configured such that a plurality of commands can concurrently use the session by referring to the environment variable;

issuing a remote command to the environment variable to cause the remote command to be executed in the remote process; and

storing results of the remote command in an environment variable associated with the session, wherein the environment variable is a variable maintained by a local command line environment and the environment variable is further configured such that the variable is used to share information between processes or applications.

15. (Previously Presented) The computer-executable method recited in claim 14, further comprising issuing causing a second remote command to the environment variable to cause the second remote command to be concurrently executed in the remote process and storing results of the second remote command in the environment variable.

16. (Previously Presented) The computer-executable method recited in claim 14, wherein causing the session to be created comprises creating the environment variable and making the variable available to other tasks.

17. (Original) The computer-executable method recited in claim 16, wherein the first command line further comprises a parameter that identifies the environment variable associated with the session.

18. (Previously Presented) The computer-executable method recited in claim 14, wherein causing a session to be created further comprises distributing the task of launching the connection to a computing device other than the local system.

19. (Original) The computer-executable method recited in claim 14, wherein the command line further identifies credentials for use in creating the session between the local system and the remote system.

20. (Currently Amended) A computer-readable storage medium having computer-executable instructions for performing the method recited in claim 14.

21. (Currently Amended) A computer-readable storage medium having computer-executable components thereon which, when executed by a computer, implement a system comprising:

a session manager configured to:

create and maintain sessions between a local system and one or more remote systems, each session being capable of hosting a plurality of connections between the local system and remote systems;

assign each session to an environment variable configured such that a plurality of commands can concurrently use each session by referring to the environment variable, wherein the environment variable is a variable maintained by a local command line environment and the environment variable is further configured such that the variable is used to share information between processes or applications;

store the environment variable in a memory; and

issue a remote command to the environment variable to cause the remote command to be executed on the one or more remote systems;

an aggregator configured to receive results of remote execution of a command, the results being each associated with a remote system, the aggregator being further configured to aggregate the results into an array; and

a throttler configured to, upon request, limit a number of active connections within each session.

22. (Currently Amended) The computer-readable storage medium of claim 21, wherein each of the results in the array is associated with the remote system on which the results originated.

23. (Currently Amended) The computer-readable storage medium of claim 21, wherein the aggregator is further configured to make the results available in a disaggregated fashion.

24. (Currently Amended) The computer-readable storage medium recited in claim 21, wherein the aggregator is further configured to aggregate the results into an environment variable associated with a session created by the session manager.

25. (Currently Amended) The computer-readable storage medium recited in claim 21, wherein the throttler is further configured to interact with other performance-based mechanisms to regulate a performance impact of a remote command execution.

26. (Currently Amended) The computer-readable storage medium recited in claim 25, wherein the other performance-based mechanisms comprises a Quality Of Service mechanism.

27. (Currently Amended) The computer-readable storage medium recited in claim 25, wherein the other performance-based mechanisms comprises an agent on a remote system that is configured to regulate an impact on resources on the remote system.

28. (Currently Amended) The computer-readable storage medium recited in claim 21, further comprising a core engine configured to manage a flow of information among each of the several components.

29. (Currently Amended) The computer-readable storage medium recited in claim 28, wherein the core engine is further configured to delegate a task of initiating a session to another system in a hierarchy of remote systems.

30. (Currently Amended) The computer-readable storage medium recited in claim 21, wherein the remote system comprises a remote agent configured to return information to

the local system wherein the information comprises at least one of a result of the execution, meta information, and information about the remote system from which the result originated.

31. (Currently Amended) The computer-readable storage medium recited in claim 21, wherein the remote system comprises an alternate process.

32. (Currently Amended) The computer-readable storage medium recited in claim 21, wherein the remote system comprises an alternate application domain.